ROLL OVER PANEL CONTAINER AND BLANK

FIELD OF THE INVENTION

This invention relates generally to containers and blanks and, more specifically to hand set, end rollover containers and blanks.

BACKGROUND OF THE INVENTION

Current hand set containers have certain limitations. Specifically, they have a tendency to not retain their shape easily under load. Similarly, they are often relatively cumbersome to form do to excessive number of panels or complex folding requirements. These are problems that make current hand set containers less desirable to use.

SUMMARY OF THE INVENTION

The present invention is directed to a hand-set tray type container with corner posts and the associated container blank. In accordance with the present invention, a single sheet of foldable material is cut and scored to define container blank. The blank includes a bottom panel and a side panel connected with the bottom panel. An end panel is also connected with the bottom panel. An end flap is connected with the end panel opposite said bottom panel. The end flap is connected with the end panel by a pair of spaced apart fold lines. Further, a corner first panel is connected with the side panel. A corner second panel is connected with the corner first panel opposite the end panel. Also, a corner third panel is connected with the corner second panel opposite the corner first panel.

The present invention further includes a single sheet of foldable material cut and scored to define a container. A bottom panel and a side panel connected with said bottom panel. An end panel is connected with said bottom panel. A corner third panel is adjacent to said side panel. Also, a corner first panel adjacent said end panel. Further, an end flap is adjacent the corner second panel.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred and alternative embodiments of the present invention are described in detail below with reference to the following drawings.

FIGURE 1 is a plan view of a single piece container blank formed according to the present invention;

FIGURE 2 is a perspective view of the container being formed according to the present invention;

FIGURE 3 is a perspective view of a partially assembled container formed in accordance with the present invention;

FIGURE 4 is a perspective view of a partially assembled container made in accordance with the present invention; and,

FIGURE 5 is a perspective view of a container according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention will now be described with reference to the accompanying drawings. The present invention is directed to a hand-set tray type container with corner posts and the associated container blank formed from a single piece of foldable material. By way of overview and with reference to FIGURES 1-5, one suitable embodiment of the present invention includes a single piece blank 20 of foldable material cut and scored to form a container 50. Specific details of the blank 20 and container 50 are described with more particularity below.

The blank 20 is cut scored, perforated or otherwise formed to include a plurality of panels which, when assembled, create the container 50 of the present invention. Wherever possible the same number is used in related panels of the blank 20 and container 50. More specifically, in all FIGURES, like numbers indicate like parts. Additionally, cuts are shown as solid lines, score lines as dashed lines and lines of perforation as broken lines.

For the purposes of this description herein, the downward direction is defined as the direction perpendicular to the outer surface of the bottom panel 22 when the container 50 has been erected. The upward direction is defined as the direction perpendicular to the inner surface of the bottom panel 22 when the container 50 has been erected.

The blank 20 and container 50, as shown in FIGURES 1-5 are made from any suitable material used in shipping. By way of non-limiting example, the present invention may be constructed from containerboard, paperboard, fiberboard, corrugated containerboard, plastics or combinations thereof. Specifically, the blank 20 and container 50 are constructed from a corrugated containerboard material that includes a single wall, double wall or triple wall material. However, as discussed, any other foldable material may be used to create the present invention.

Referring now to FIGURE 1, the blank 20 includes a bottom panel 22. A side panel 24 is connected with the bottom panel 22. An end panel 28 is connected with the bottom panel 22. An end flap 34 is connected with the end panel 26 opposite the bottom panel 22. The overall size of the end flap 34 is variable. As shown, the size of the end flap 34 is smaller than the end panel 26, however, it will be appreciated that an end flap 34 substantially equal in size to the end panel 26 is also within the scope of this invention.

The end flap 34 is connected with the end panel 26 by a pair of spaced score lines 36. In a presently preferred embodiment, the length of the spaced score lines 36 is less than the length of the end flap 34 and the end panel 26. However, the spaced score lines 36 may also be substantially equal to the length of the end flap 34 and the end panel 26, if desired. In an embodiment where the end flap 34 is smaller than the end panel 26

(FIGURE 1), end flap cuts 40 may be used to form tabs 48. However, in an embodiment where the end flap 34 is about the same size as the end panel 26, the end flap cuts 40 and formed tabs 48 may be omitted. Those skilled in the art will appreciate when the end flap cuts 40 and tabs 48 may be necessary.

Connected with the side panel 24 is a corner post assembly 31. The corner post assembly 31 includes a corner first panel 30 connected with the end panel 28. A corner second panel 32 is connected with the corner first panel 30, opposite the end panel 28. A corner third panel 34 is connected with the corner second panel 32, opposite the corner first panel 30.

The corner post assembly 31may include includes corner notches 38 in the corner first panel 30 and the corner second panel 32. The end flap cuts 40 and tabs 48 are preferable sized and spaced relative to the corner notches 38. It will be appreciated that when the end flap cuts 40 and tabs are excluded, so may the corner notches.

FIGURES 2-5 depict the formation of container 50 from the blank 20. It should be noted, these FIGURES illustrate only one side of the container 50 being formed at a time. This is done for simplicity of discussion purposes only. In practice, the entire container will likely be erected simultaneously. It will be appreciated that this container is a hand-set container. However, it will also be appreciated that container 50 may be formed by other means, such as, machine forming. Initially, the side panels 24 are folded in an upward direction. The folding of the side panels 24 also folds the corner post assembly 31 as well. Subsequently, the corner post assembly 31 is folded about a fold line between the corner first panel 28 and the corner second panel 30, as best seen in FIGURE 2. Then, the corner post assembly 31 is folded again about a fold line between the side panel 24 and the corner first panel 28, to form a substantially right angle.

The end panel 26 may then be folded upwards to bring the end panel 26 adjacent to the corner first panel 28. The end flap 34 is then folded inwardly to bring the end flap 34 adjacent the corner second panel 30. Folding of the end flap 34 in this manner will form tabs 48 if they are included. It will be appreciated how the tab 40, end flap cuts 38 and fold-over nature of the end flap 34 will serve to lock the end flap in place. It will also be appreciated, how, with a relatively larger end flap, these locking elements are not necessary.

Corner locking slots 46 are also located in the bottom panel 22 and side panels 24. The corner locking slots 46 are spaced from the end panel 26 a distance slightly greater than corner third panel 32. In this manner, as best seen in FIGURE 5, the side panel 24 may be deflected inwardly to help prevent any unwanted corner post assembly 31 movement.

Any variety of additional elements may be included, such as, without limitation, vent holes, specialized liners or moisture barriers, etc., without departing from the spirit

and scope of the present invention. Similarly, rounding or otherwise trimming the various panels is considered within the scope of the instant invention.

While the preferred embodiment of the invention has been illustrated and described, as noted above, many changes can be made without departing from the spirit and scope of the invention. Accordingly, the scope of the invention is not limited by the disclosure of the preferred embodiment. Instead, the invention should be determined entirely by reference to the claims that follow.